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AUSTRALIA

Patents Act 1990

COMPLETE SPECIFICATION

FOR A STANDARD PATENT

ORIGINAL

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Invention Title: GAMING MACHINE
COMMUNICATING SYSTEM

Details of Associated
Provisional Application: Australian Patent Application
No. 2003 901 552
dated 3 April 2003

The following statement is a full description of this invention, including the best method of performing it known to us:

IGT (AUSTRALIA) PTY LIMITED

**AUSTRALIA
Patents Act 1990**

PROVISIONAL SPECIFICATION FOR THE INVENTION ENTITLED:

GAMING MACHINE COMMUNICATION SYSTEM

The invention is described in the following statement:-

The present invention relates to gaming establishments having a plurality of gaming machines and, in particular, to a communications and data transfer system for such gaming establishments.

Gaming machines, such as poker or slot or fruit machines as the devices are termed in different jurisdictions, are now completely electronic and so the game or games which each machine is capable of playing is/are stored electronically within the machine. In addition, the history of the results of the games played is also stored electronically.

There are many functions which might be termed "low security" which are carried out by employees of the gaming establishment which require interaction between the employee and the machine. An example of such an interaction is switching all machines at a venue, or all machines in a given locality at a venue, to operate a specific game. For example, if a venue is expecting a lunch time visit by a group of elderly bowlers, croquet players, or the like, the venue may wish to have the gaming machines offer games which appeal to elderly players. However, at the same venue on the evening of the same day, the venue may be hosting an engagement reception at which the guests will predominantly be young friends of the engaged couple. Thus, under these circumstances, it is desirable to have the gaming machines offer games which appeal to young adult players. Clearly, a need therefore exists for such machines to be quickly changed from the one game to another. There are other functions of a similar nature (to be described hereafter) which might also be termed "low security" functions.

This is to be contrasted with other functions requiring interaction between an operator and the gaming machines. These might for convenience be termed "high security" functions. One of these functions is the downloading of the data and instructions constituting the operating software of a game or games. Not only is such data voluminous (typically approximately 30 – 100 Mb) and the downloading time correspondingly long (e.g. typically 1 – 5 minutes) but the link must be secure against criminal elements who may seek to tamper with such software.

Another example of what might be termed "high security" activity is the monitoring of game results and the provision of data to game licensing authorities upon which data the

taxation liability of the venue can be , or is, calculated. The present invention is not concerned with such "high security" data transfer.

The object of the present invention is therefore to provide a communication and data transfer system for gaming establishments which enables the status of gaming machines to be monitored and/or various operational control parameters of gaming machines to be changed, for example by authorised employees of the gaming establishment.

In accordance with a first aspect of the present invention there is disclosed a communications and data transfer system for gaming establishments having a plurality of gaming machines arranged in proximity to each other, said system comprising a hand held portable transponder adapted to transmit and receive modulated electromagnetic radiation over a limited range which approximates to only the linear distance occupied by said gaming machines, said transponder further having a display means and input means, and each of said gaming machines includes a communication module connected with the electronic controller of each said gaming machine whereby identification and control signals for a specific one or ones of said plurality of adjacent gaming machines can be input to, and sent from, said transponder to the electronic controller of the selected gaming machine(s) and in reply thereto, status data of said selected gaming machine(s) can be sent to, or overwritten by, said transponder.

In accordance with a second aspect of the present invention there is disclosed a method of outputting or changing status data of a selected one or ones of a plurality of electronic gaming machines each having an electronic controller with an electromagnetic communication module connected thereto, said plurality of gaming machines being arranged in proximity to each other in a gaming establishment, said method comprising the steps of:

- (i) bringing with range of said selected gaming machine a hand held portable transponder adapted to transmit and receive modulated electromagnetic radiation over a limited range which approximates to only the linear distance occupied by said gaming machines,

- (ii) transmitting identification and control signals from said transponder to said selected gaming machine(s) to both select same and enable the electronic controller thereof, and
- (iii) receiving from said selected gaming machine(s) at said transponder, status data of said selected gaming machine, and/or
- (iv) transmitting from said transponder to said selected gaming machine(s) status data which is over-written into the electronic controller of said selected gaming machine(s).

Preferred embodiments of the present invention will now be described with reference to the drawings in which:

Fig. 1 is a perspective view of a prior art multigame poker machine,

Fig. 2 is a similar view of the preferred embodiment of a multigame poke machine of the present invention,

Fig. 3 illustrates the layout of a gaming establishment having a plurality of the machines of Fig. 2, and

Fig. 4 illustrates the electronic controller and communications module of the machine of Figs. 2 and 3 communicating with the transponder of Fig. 3.

As seen in Fig. 1 a prior art gaming machine 1 has a video screen 2 located between an upper panel 3 and a lower panel 4. The screen 2 displays moving images (typically of rotating reels each of which carries symbols of various kinds), whilst the panels 3,4 carry artwork of various kinds which is fixed as to the information displayed. Conventionally, the upper panel 3 displays the name of the game or games offered by the machine and is intended to attract a player to the machine. The lower panel 4 typically sets out the table of winning combinations and information about the rules of the game which a player needs to know. Also provided but not illustrated are conventional items such as a coin receiving slot, bill receptacle, play and reserve buttons, and the like.

This is to be contrasted with the gaming machine 11 of the preferred embodiment illustrated in Fig. 2 which has a substantially conventional (lower) screen 12 and panel 14 but has an upper screen 13 instead of the upper panel 3. As before, the panel 14 sets out

the table of winning combinations, etc and the conventional coin receiving slot etc. are not illustrated in Fig. 2.

The machine 11 is a multigame machine. Stored electronically within the machine 11 are several different games and for each game a different display for the upper screen 13 is stored. Changing the game played on the machine 11 enables the corresponding display to be viewed on the upper screen 13. Since the screen 13 has replaced the panel 3, the upper display can be animated, thereby making it both more attractive and more attention getting. In some jurisdictions, such as New Zealand, the number of machines 1,11 which a particular gaming establishment can operate is strictly limited to machines which are able to offer a plurality of games. Thus multigame machines are of increased economic worth.

Clearly it is necessary for a multigame machine to have a mechanism by means of which one of the stored games within the machine can be selected for operation (or possibly a sub-range of the stored games). In prior art multigame machines such a mechanism has been a combination of operator accessible buttons (for example located behind a lockable flap) and a menu which the operator is able to cause to be displayed on the screen 2, for example. It is clearly a time consuming activity to unlock the flap, push the required button or buttons to display the menu, follow the menu instructions with more button pushing, close and lock the flap, and then repeat the procedure with the next machine.

As indicated in Fig. 3, most gaming venues have large numbers of machines generally arranged in rows or banks on a gaming floor. The dimensions of the gaming floor may range from tens of metres to hundreds of metres depending upon the size of the establishment. Fig. 3 illustrates a portion of such a gaming floor. For a small establishment there may be only the three illustrated rows 16 of machines 11 but for a large establishment there may be many such rows 16.

Also illustrated in Fig. 3 is a personal digital assistant (PDA) 17 such as a PALM PILOT or IPAQ (Registered Trade Marks) or similar, which as indicated in Fig. 4, is able to communicate with a communications module 18 which is connected with the electronic controller 19 of the gaming machine 11. The electronic controller 19 is typically a central processing unit (CPU) of the machine 11.

The PDA 17 is equipped with a BLUETOOTH (Registered Trade Mark) module which enables remote communication over a relatively short range (typically 1 – 10 metres for class II and 10 – 100 metres for Class I). The transmission can be either wireless or infrared and other similar devices such as BLUEFISH (Registered Trade Mark) disclosed in WO 01/54104 can be used instead. However, the BLUETOOTH device has the advantage of wide commercial acceptance. Other wireless standards such as 802.11 ETHERNET or similar, can also be used.

Within the PDA 17 is a store of data including the numbers of various authorised employees each having an associated PIN number. Thus an employee enters his authorisation number followed by his PIN number to activate the PDA17. The PDA 17 then communicates with all machines 11 in range and interrogates them to confirm an active status. A list of all active machines 11 within range of the PDA17 then appears on the display screen of the PDA17. The authorised employee is then able to select one or a group of machines 11 from those listed on the PDA display. Thus each machine is individually addressable or a group of machines are simultaneously addressable.

The PDA17 can then be used both to download commands to the addressed machine(s) 11 and to upload status information or upload responses to the commands. Thus a particular game from a suite of games present in all machines 11 can be selected. This simultaneously updates all machines to the desired game thereby enabling rapid game changes to suit a busy venue social program. If desired, the game change-over can be programmed to operate at a specific time in the future (in conjunction with the CPU clock) or after a specified time delay.

In addition, the authorised employee can interrogate the machine, or each machine in turn, to ascertain various operational parameters such as rate of note rejects, rate of coin rejects, cash turnover ratio, and the like. This enables the authorised employee to make various managerial decisions in addition to more routine functions such as "keying-off" a jackpot on a machine. When this happens the credit value and security information are uploaded from the electronic controller 19 via the communications module 18 to the PDA17.

Preferably the PDA17 includes a printer which enables the authorised employee to print a

small coupon or ticket which the winning player can redeem for cash at a change booth. This development overcomes the previous need for each machine to have a ticket or coupon printer and even the need for a hopper for prize payments.

The same arrangements can also be used to download data into a machine 11. Thus a player wishing to transfer credits from one machine to another merely has to catch the attention of the authorised employee who then uses the PDA17 to upload the credits from the first machine 11 and then download the credits to the second machine 11.

Furthermore, the machines 11 can call for assistance once a fault is detected by internal surveillance equipment. Thus any PDA17 in range of a given machine 11 can be advised that, for example, the cash tin is almost full, the hopper is almost empty, printer paper is low, various lamps and/or buttons have malfunctioned, and the like. This enables maintenance or preventative maintenance, to be carried out at the earliest opportunity. As a consequence machine downtime is reduced.

In connection with maintenance, prior art machines require a significant amount of time for technicians to manually enter data, such as configuration data, into a machine. Such data includes game type, percentage return, button panel layout, GMID number, house number and the like. Instead by use of the PDA17, this data can be quickly downloaded to a particular machine 11, or a group of such machines 11. Similarly, diagnosis of any fault in the machine 11 can be speeded up by status data upload, especially in the case where the machine screen 2,12 has malfunctioned.

In this connection, it will be appreciated that transfer of a sub-routine stored in the PDA17 is a much faster method of data input than manual manipulation of the prior art 3-button up/down menu selection system used by the prior art machines 1 of Fig. 1.

The PDA17 can also be used to check the integrity of gaming machine software even whilst a machine 11 is being played. For example, a cyclic redundancy check calculation of the machine program storage devices can be requested by the PDA17 without either the need to interrupt a player or the need for connection to any other system.

It will be appreciated by those skilled in the art that the system is especially secure since there is no transfer of "high security" data such as critical or game dependent data to, or from, the machine 11. Thus the integrity of the gaming machine software cannot be compromised even if the transmission protocols become known. Thus all software (both operating system and game programs) located in the gaming machine 11, will be as submitted to, and approved by, the game licensing authorities. This is assisted by the preferred limited transmission range of the BLUETOOTH apparatus which makes it unlikely that anyone outside the gaming venue would be able to obtain wireless access to any of the machines 11.

Furthermore, some large gaming establishments with many gaming machines have monitor systems which cost hundreds of thousands of dollars. One aspect of such monitor systems is that they provide a player tracker function. However, the above described communications system can provide a low cost "entry level" player tracker function for those venues having a relatively small number of gaming machines. This is achieved by the PDA17 being used to upload game results from the machines 11. This data is then able to be transferred to a personal computer, or similar, and manipulated at will.

The foregoing describes only some embodiments of the present invention and modifications, obvious to those skilled in the art, can be made thereto without departing from the scope of the present invention.

The term "comprising" (and its grammatical variations) as used herein is used in the inclusive sense of "having" or "including" and not in the exclusive sense of "consisting only of".

ASPECTS OF THE INVENTION

The following paragraphs define some aspects of the present invention.

1. A communications and data transfer system for gaming establishments having a plurality of gaming machines arranged in proximity to each other, said system comprising a hand held portable transponder adapted to transmit and receive modulated electromagnetic radiation over a limited range which approximates to only the linear distance occupied by said gaming machines, said transponder further having a display means and input means, and each of said gaming machines includes a communication module connected with the electronic controller of each said gaming machine whereby identification and control signals for a specific one or ones of said plurality of adjacent gaming machines can be input to, and sent from, said transponder to the electronic controller of the selected gaming machine(s) and in reply thereto, status data of said selected gaming machine(s) can be sent to, or overwritten by, said transponder.
2. The system as defined in paragraph 1 wherein said transponder comprises a personal digital assistant.
3. The system as defined in paragraph 1 or 2 wherein said transponder can download information to, and upload information from, a plurality of said gaming machines all located within said distance.
4. The system as defined in any one of paragraphs 1 – 3 wherein each said gaming machine has stored therein a multiple number of game programs and said control signals select a predetermined one of said programs to determine which game is able to be played on said machines.
5. The system as defined in paragraph 4 wherein the selection of said game program occurs at a predetermined time and after transmission of said control signals.
6. The system as defined in any one of paragraphs 1 – 5 wherein said status data includes data selected from the group consisting of cash tin status, hopper status,

printer paper status, button malfunction status, lamp status, note reject data, coin reject data and cash turnover ratio.

7. The system as defined in any one of paragraphs 1 – 6 wherein said control signals input configuration data into the or each selected said machine, said configuration data being selected from the group consisting of game type, percentage return, button panel layout, GMID number, and home number.
8. A communications data and transfer system substantially as herein described with reference to Figs. 2 – 4 of the drawings.
9. A method of outputting or changing status data of a selected one or ones of a plurality of electronic gaming machines each having an electronic controller with an electromagnetic communication module connected thereto, said plurality of gaming machines being arranged in proximity to each other in a gaming establishment, said method comprising the steps of:
 - (i) bringing with range of said selected gaming machine a hand held portable transponder adapted to transmit and receive modulated electromagnetic radiation over a limited range which approximates to only the linear distance occupied by said gaming machines,
 - (ii) transmitting identification and control signals from said transponder to said selected gaming machine(s) to both select same and enable the electronic controller thereof, and
 - (iii) receiving from said selected gaming machine(s) at said transponder, status data of said selected gaming machine, and/or
 - (iv) transmitting from said transponder to said selected gaming machine(s) status data which is over-written into the electronic controller of said selected gaming machine(s).

10. A method of outputting or changing status data of a selected one of a plurality of electronic gaming machines, said method being substantially as herein described with reference to Figs. 2 - 4 of the drawings.

Dated this 3rd day of April 2003

IGT (AUSTRALIA) PTY LIMITED

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FIG 1
PRIOR ART

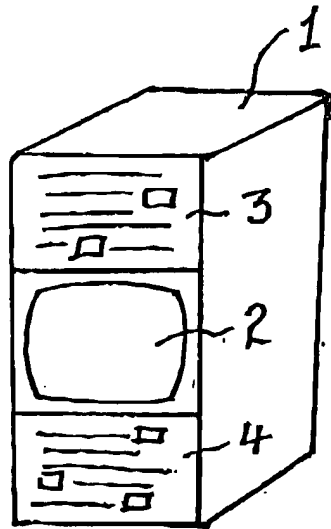


FIG. 2

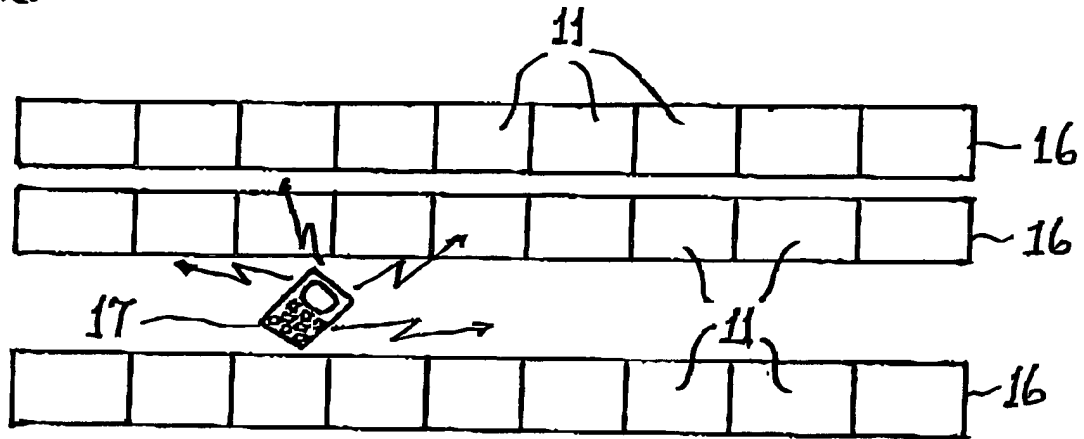
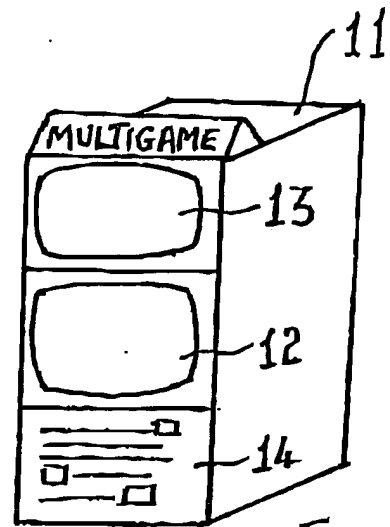


FIG. 3

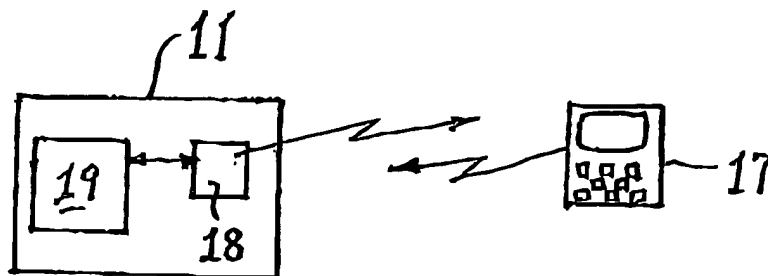


FIG. 4